

# Disaster Resilience

A NATIONAL IMPERATIVE



THE NATIONAL ACADEMIES

# Disaster Resilience: A National Imperative

## **National Association of Counties Webinar “From the County Up: Toward a 2030 Vision of Disaster Resilience”**

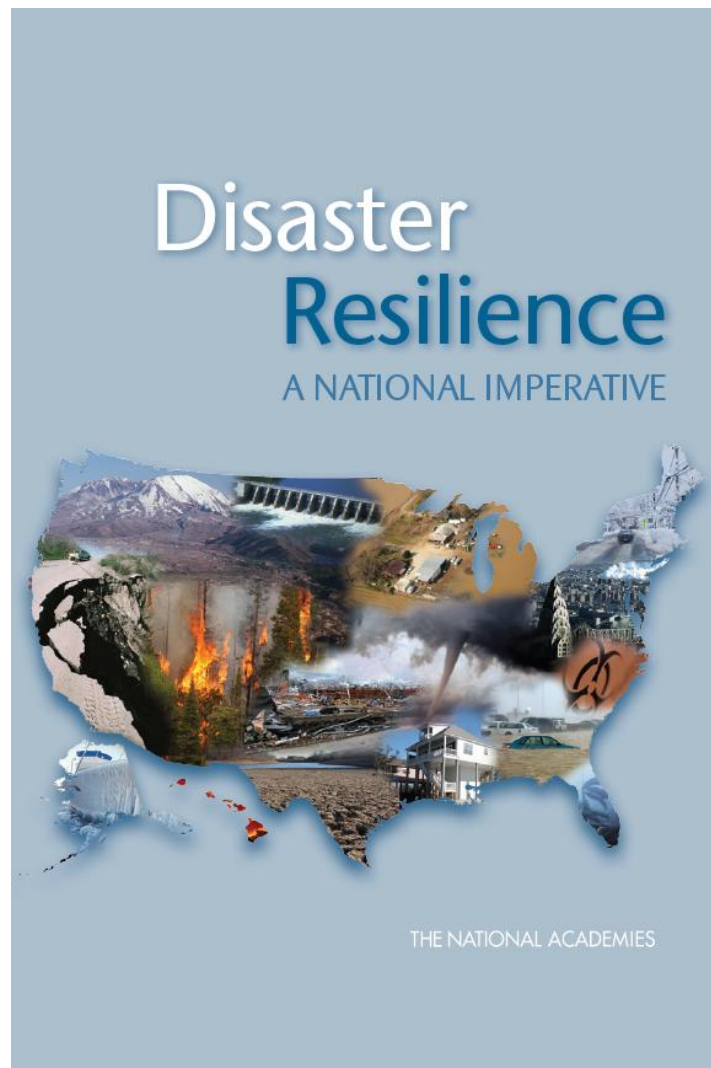
March 27, 2013

Committee on Increasing National Resilience to  
Hazards and Disasters  
National Research Council  
The National Academies

Presented by Ellis M. Stanley, Sr.

# Overview

- ❑ Disaster resilience report highlights
- ❑ Next steps – opportunities to help build resilient communities



## Study Sponsors

Department of Agriculture Forest Service  
U.S. Army Corps of Engineers  
Department of Energy  
U.S. Geological Survey  
Department of Homeland Security and  
Federal Emergency Management Agency  
National Aeronautics and Space Administration  
National Oceanic and Atmospheric Administration  
Oak Ridge National Laboratory and the Community  
and Regional Resilience Institute

## Timeline

- ❑ Agreement on study task, summer 2010
  - ❑ Study began, September 2010
  - ❑ Report release, August 2012
- ❑ Disaster Resilience in America: Launching a National Conversation, November 2012

# The Task

- ❑ Define “national resilience” and frame the primary issues related to increasing national resilience to hazards and disasters in the United States;
- ❑ Provide goals, baseline conditions, or performance metrics for resilience at the U.S. national level;
- ❑ Describe the state of knowledge about resilience to hazards and disasters in the United States;
- ❑ Outline additional information or data and gaps and obstacles to action that need to be addressed in order to increase resilience to hazards and disasters in the United States;
- ❑ Present conclusions and recommendations about what approaches are needed to elevate national resilience to hazards and disasters in the United States.

# The Team

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# What is Resilience?

***The ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events***



Photo: Cedar Rapids, IA during the 2008 flooding  
Source: AP photo/Jeff Robertson



# The Problem: The Need for a Resilient Nation



Photo: Joplin, MO after the May 22, 2011 tornado  
Source: Charlie Ridel/AP Photo

- ❑ Beyond the unquantifiable costs of injury and loss of life, in 2011 alone economic damages from natural disasters in the United States exceeded \$55 billion, with 14 events costing more than \$1 billion each.
- ❑ No person or place is immune from disasters or disaster-related losses.
- ❑ Communities and the nation face difficult fiscal, social, cultural, and environmental choices about the best ways to ensure security and quality of life against disasters.

# So What Do We Do?



# Establish a National “Culture Of Resilience”

- ❑ Communities, and their governance structures and systems, need to be robust and collaborative.
- ❑ Long-term shifts in physical and cultural approaches are needed.
- ❑ Linked bottom-up and top-down networks are important for managing risk and increasing resilience.
- ❑ Community resilience requires identification and acceptance of specific roles and responsibilities for government, the private sector, and local stakeholders.



Photo: Port of Los Angeles upgrade to address risk and sustainability  
Source: Gerry Galloway

**A necessary first step to strengthen the nation’s resilience and provide the leadership to establish a national “culture of resilience” is a full and clear commitment to disaster resilience by the federal government.**

# Specific Steps toward a “Culture Of Resilience”

- ☐ **Build local capacity—resilience from the bottom-up.**
- ☐ **Identify, assess, and reduce disaster risk.**
- ☐ **Build the case for making long-term investments in resilience.**
- ☐ **Measure progress.**
- ☐ **Develop national resilience vision and policy.**

# Build Local Capacity—Resilience from the Bottom-Up

Community resilience begins with strong local capacity.

## Universal Bottom-Up Steps

- Engage the community in disaster policy planning
- Link public & private infrastructure performance to resilience goals
- Communicate risks, promote a culture of resilience
- Organize communities and families to prepare for disasters
- Adopt sound land-use practices and adopt and enforce building codes

*The nation's communities are unique and the risks faced by every community vary according to local hazards.*

# Identify, Assess, and Reduce Disaster Risks

Reducing risk requires a process of identifying risk, developing and implementing a strategy to deal with that risk, and keeping that strategy up to date.



A variety of tools and approaches are available to manage disaster risk:

Structural: e.g., levees, dams, disaster-resistant construction, “smart” building, and well-enforced building codes

Nonstructural: e.g., natural defenses, risk mapping, zoning ordinances, economic incentives, hazard forecasting/warning, insurance, and catastrophe bonds

# Demonstrate the Case for Resilience Investments: Assessing the Challenge

- ❑ **Valuation of a community's assets**—including infrastructure and assets with social, cultural, and environmental value—is important to make resilience investment decisions.
- ❑ **Demonstrating that community investments in resilience will yield measurable short- and long-term benefits** is critical for sustained commitment to increasing resilience.
- ❑ **Knowing the patterns of disaster losses** allows communities to understand where the impacts are the greatest and what factors drive their exposure and vulnerability.



Photo: S.S. Hurricane Camille in Gulfport, MS in October 2005 after Hurricane Katrina  
Source: Susan Cutter

**Existing loss and inventory databases in the United States are useful for certain kinds of analyses, but improvement in measurements, accuracy, and consistency are needed.**

# Measure Progress



Photo: Elevated home near Gulfport, MS; Source: E. Eide

- ❑ Critical dimensions of a consistent resilience measurement system are:
  - the ability of critical infrastructure to continue to perform;
  - social factors (e.g., health, socioeconomic status) that enhance or limit a community's ability to recover;
  - indicators of the ability of buildings or structures to withstand different disasters (e.g., building codes, adopted and enforced);
  - factors that capture the special needs of individuals and groups.

**The nation needs a consistent basis for measuring resilience.**



# Develop Resilience Policy and Vision

- ❑ Strong governance at all levels is key.
- ❑ National policies need to take a long-term view of community resilience.
- ❑ Gaps exist in policies and programs among federal agencies in all parts of the resilience process.
- ❑ Gaps result from:
  - the legislative authority within which agencies operate
  - lack of effective coordination of the roles and responsibilities
  - lack of a unified resilience vision.



**The nation does not have a overall vision or coordinating strategy for resilience.**

# Recommendations

- ❑ Government should support the creation and maintenance of broad-based **community resilience coalitions** at local and regional levels.
- ❑ Community commitment to and investment in **risk management strategies**.
- ❑ Establish a **national disaster database**.
- ❑ Develop a **National Resilience Scorecard**.
- ❑ Federal agencies should incorporate national resilience as a guiding principle.
- ❑ All federal agencies should ensure they are promoting and coordinating national resilience in their programs and policies.

# Next Steps

## Short-term: dissemination & outreach through September 2013



### ❑ November 30, 2012—Event in Washington, “Disaster Resilience in America: Launching a National Conversation”

- ~500 participants (live and webcast)
- Plenary session: keynotes and three panel discussions
- Workshop session: ~50 participants; discuss community coalitions, metrics and indicators, and risk management

### ❑ November 30 Event Summary (spring 2013)

### ❑ Resilience website





<http://nas-sites.org/resilience/>

# Next Steps

## Stakeholder Engagement

- Briefings

(sponsors, White House, Senate and House staff, IPCC working group, NAIC, NATO, TISP, NVOAD, NCSE, EMForum, EERI, NACo, and others)

- Community Engagement through meetings, webinars, and strategic planning exercises

# Next Steps

**Longer-term: Many requests to continue the conversation and engagement from NRC beyond September 2013**

**❑ Exploring new ways to:**

- Measure resilience in communities
- Build community coalitions
- Manage and communicate risk better
- Share information and data to build resilient communities

**❑ The NRC could:**

- convene regional meetings, workshops, strategy sessions
- serve as a neutral convening and meeting venue
- coordinate regular webinars
- continue to develop and maintain resilience website
- help facilitate community exchanges, regional challenges
- develop additional ad hoc activities



# **We'd appreciate your input!**

## **Would you like to work with us to...**

- ☐ Develop useful measures/metrics/indicators to measure progress toward building greater resilience to disasters
- ☐ Develop or use a “scorecard” to document the resilience of your community
- ☐ Build community coalitions and encourage citizens, neighborhoods, and communities to become engaged in building their own resilience
- ☐ Get access to information and data to increase your resilience
- ☐ Organize and hold webinars and other convening activities for diverse stakeholders

# Thank you!